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Overcoming the cold-chain: Designing a novel freeze-stable vaccine

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Freeze-sensitive vaccines represent over 50% of the \$749 million UNICEF spent on all vaccines in 2010 and with the rate of exposure to freezing temperatures in developed and developing countries at 13.5% and 21.9%, respectively, millions of lives and dollars are lost every year. In this presentation, the problem of freeze-sensitivity of current vaccines is reviewed and a solution is presented using a new liposomal adjuvant consisting of a specific lipid composition that currently is not in the market. Two different case studies are presented where this novel vaccine model has been shown to be successful as a novel approach for developing freeze-sensitive vaccines, improving vaccine stability and reducing the risks associated with accidental freezing of vaccines.

Biography

Aryo Sorayya is currently a student at Stanford University and the Founder of Engimata Inc., a start-up aimed at development of future vaccines. He has completed a research project on vaccine stability which culminated in numerous awards, including an Intel ISEF 1st Place in Health and Medicine, Grand Prize at the CA State Science Fair, AAPS Intel Award, Sheikh Zayed Young Scientist Award, John Muir Health Award and Contra Costa County Rising Star Award. He has also worked at NASA Ames Research Center as part of Stanford's iGEM team and won Gold Medal at the International Genetically Engineered Machines Competition (iGEM).

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